

REMARKS/ARGUMENTS

On the basis of the foregoing, the Applicant would like to respectfully request continued examination of this application.

Claim 36 has been amended to recite a method for applying a coating to a stent comprising the steps of:

providing a stent to be coated, the stent comprising a plurality of struts connected at a plurality of junctions;

supporting the stent for coating;

placing a first agent into a first chamber connected to a first solenoid fluid dispensing head;

placing the first agent under pressure such that the first agent is dispensed from the first solenoid dispensing head when the first solenoid dispensing head is open and the first agent is not dispensed from the first solenoid dispensing head when the first solenoid dispensing head is closed;

providing a processor to control the opening and closing of the first solenoid valve dispensing head;

rotating the stent with respect to the first solenoid fluid dispensing head;

opening the first solenoid fluid dispensing head when a strut of the stent that is desired to be coated with the first agent is adjacent the first solenoid fluid dispensing head, thereby causing the first agent to be dispensed from the first solenoid fluid dispensing head onto the desired strut of the stent; and

closing the first solenoid fluid dispensing head when a junction of the stent is adjacent the first solenoid fluid dispensing head, thereby preventing the first agent from being dispensed from the first solenoid fluid dispensing head onto the junction.

Support for the subject matter now recited in claim 36 can be found in several places in the specification. For example, page 4, lines 5-20, states:

Figure 3 illustrates a system for coating a medical appliance using a solenoid type fluid dispensing head in accord with one embodiment of the present invention. In this system, solenoid type fluid dispensing head 31 may be used to force coating onto

the patterned surfaces of medical appliance 34. In this embodiment, solenoid type fluid dispensing head 31 may be placed in close proximity to medical appliance 34 and may be moved back and forth along track 37 so that it may be able to coat the entire external patterned surface of medical appliance 34. Solenoid type fluid dispensing head 31 may be controlled by, or at least receive signals from, processor 32, which may instruct it to coat only struts 370 of medical appliance 34. In other words, as solenoid type fluid dispensing head 31 slides back and forth along track 37 and as medical appliance 34 is spun on appliance support 35, solenoid type fluid dispensing head 31 may force coating onto struts 370 while concurrently refraining from forcing coating into spaces between struts 370, because coating forced into these spaces would simply be wasted or result in errant deposits of coating elsewhere on medical appliance 34.

As can be seen in FIG. 3, a portion 39 of struts 370 has already been coated, while another portion of struts 370 has not been coated. Also apparent in FIG. 3 is that junctions 301 of struts 370 have not been coated.

Page 9, lines 23-25, states:

Here, solenoid type fluid dispensing head 41, working in concert with appliance support 45, which may hold, move, and rotate the medical appliance 44, may coat each of the struts 47 but not the junctions 48 as shown in Figure 4.

Page 11, lines 15-21, states:

When an exposed surface of medical appliance 64 that requires coating is adjacent to the solenoid type fluid dispensing head 61, solenoid type fluid dispensing head 61 is activated by the processor to open and allow the coating material, which is under pressure, to flow through solenoid type fluid dispensing head 61 and through nozzle 68 onto medical appliance 64. Nozzle 68 is adapted to provide maximum control over the coating material to allow accurate coating of medical appliance 64.

Page 12, lines 21-29, states:

Solenoid type fluid dispensing head 81 is a normally closed electromagnetically controlled valve having inlet 82 which connects to a pressurized coating source (not shown). The coating does not normally flow through solenoid type fluid dispensing head 81 because poppet 83 seals the passage to nozzle 87 under the influence of a spring (not shown). However, when a voltage is applied across contacts 84, current

flows through coil 85, and an electromagnetic force is consequently applied to poppet 83. Poppet 83 is thereby induced to move in the direction of arrow 86, opening the passage and allowing the coating to flow. When poppet 83 is in the open position, the coating flows out through nozzle 87 onto the medical appliance (not shown).

The Applicant has also added new claims 59-74. Support for these claims may also be found in the above-quoted passages as well as in other passages in the specification. With respect to claims 63 and 71 which recite, inter alia, "refraining from dispensing the coating material into spaces between struts of the stent," support can be found on page 4, lines 13-17, which states:

In other words, as solenoid type fluid dispensing head 31 slides back and forth along track 37 and as medical appliance 34 is spun on appliance support 35, solenoid type fluid dispensing head 31 may force coating onto struts 370 while concurrently refraining from forcing coating into spaces between struts 370, because coating forced into these spaces would simply be wasted or result in errant deposits of coating elsewhere on medical appliance 34.

The Applicant respectfully submits that the invention as now claimed is neither anticipated nor rendered obvious by the prior art of record. U.S. Patent No. 6,395,326 to Castro et al. discloses a method of coating stents, but does not disclose controlling the dispensing of a coating material under pressure by selectively opening and closing a solenoid dispensing head to coat stent struts but not stent junctions, as now recited in claim 36. The Castro reference discloses intermittent dispensing to create certain disclosed patterns (see, e.g., Figures 8A-8I, 10E-10I, 11A-11B, 12A-12D, 13F-13H), but Castro discloses achieving such intermittent dispensing by applying "bursts of air pressure" in a coating reservoir (see, e.g., 9:33-35), not by (i) placing coating material under continuous pressure such that the coating material is dispensed from a dispensing head when the dispensing head is activated; (ii) providing a processor to control the dispensing of coating by the dispensing head; (iii) controlling the dispensing of coating material such that the coating material is dispensed from

the dispensing head when a part of the stent that is desired to be coated with the coating material is adjacent the dispensing head, thereby causing the coating material to be dispensed from the dispensing head onto the desired part of the stent; and (iv) controlling the dispensing of coating material such that the coating material is not dispensed from the dispensing head when no part of the stent that is desired to be coated with the coating material is adjacent the dispensing head, thereby preventing the coating material from being dispensed from the dispensing head. These or similar steps are recited in each of independent claims 36, 59 and 67.


Tisone discloses an apparatus for high speed dot array dispensing, for dispensing patterns of reagents onto a substrate. Tisone mentions the use of solenoid valve dispensers, but Tisone does not disclose such a dispenser for applying a coating and, moreover, does not disclose the various steps now claimed by the Applicant but not disclosed by Castro, such as placing coating material under continuous pressure, providing a processor to control the dispensing of coating, and controlling the dispensing such that coating material is not dispensed from the dispensing head when no part of the stent that is desired to be coated is adjacent the dispensing head. The Applicant respectfully submits that there is no suggestion in the reagent array device disclosure of Tisone for modifying Castro to include these steps now claimed by the Applicant.

The Applicant respectfully submits that all of the pending claims of the present application are now in condition for allowance. Prompt consideration and allowance of the present application are therefore earnestly solicited.

The Commissioner is hereby authorized to charge any fees and credit any overpayments associated with this filing to Kenyon & Kenyon, Deposit Account No. 11-0600. Should any questions arise, the Examiner is invited to contact the undersigned at (202) 220-4225.

Respectfully submitted,

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